

AC 4485

LONDON SCHOOL OF HYGIENE
AND TROPICAL MEDICINE.
(DEPT. OF MEDICAL STATISTICS)



Prevention and Treatment of Tuberculosis in the Administrative County of Lancaster

Report of the Central Tuberculosis Officer
of the Lancashire County Council
for the year 1944.

COUNTY TUBERCULOSIS COMMITTEE

(1946)

The Chairman of the County Council :

County Alderman Sir Percy Macdonald, J.P.

The Vice-Chairman of the County Council :

County Alderman Sir James Aitken, J.P.

Chairman of Committee :

*County Alderman P. F. Mannix, M.D., M.Ch., B.A.O., J.P.

Vice-Chairman :

*County Councillor G. E. Hardman, J.P.

County Aldermen :

*H. Bright, Esq.

Lady Openshaw, J.P.

H. F. Jeffery, Esq., M.B., Ch.B., J.P.

County Councillors :

*J. H. Dawson, Esq., J.P., F.R.S.A.

F. H. Dodd, Esq.

C. W. Doodson, Esq.

*Miss E. Garnett, J.P.

A. E. Goldstone, Esq.

J. R. Hull, Esq.

E. A. Jenkins Esq B A., F.L.A.S.

*J. Kershaw, Esq.

W. T. Miller, Esq., J.P.

*A. Ogden, Esq.

*E. Smethurst, Esq., J.P.

J. W. Thorley, Esq.

J. Welch, Esq., M.A., LL.B.

F. Wilkinson, Esq., J.P.

S. S. Wilson, Esq.

* Members of the Sanatorium and Hospital Sub-Committee

MEDICAL AND NURSING STAFF OF THE TUBERCULOSIS DEPARTMENT

(January, 1946.)

Central Tuberculosis Officer Dr. G. LISSANT COX, C.B.E.

AREA No. 1 (Population 266,848)

(with dispensaries at Lancaster, Chorley and Preston)

<i>Consultant Tuberculosis Officer and Visiting Physician, Lancaster Pul- monary Hospital (37 beds)</i>	Dr. F. C. S. BRADBURY
<i>Assistant Tuberculosis Officer</i>	Dr. C. V. STEVENSON
<i>Tuberculosis Health Visitors</i>	A. DICKINSON, G. M. HUNTER, N. LEDSHAM, I. WILKINSON
<i>Matron, Lancaster Pulm. Hospital</i>	A. PATCHETT
<i>Clerical staff</i>	Two

AREA No. 2 (Population : County, 289,590 ; Blackburn, 102,630)

(with dispensaries at Accrington, Blackburn, Darwen, Nelson and Stacksteads)

<i>Consultant Tuberculosis Officer and Visiting Med. Supt., Withnell Pulm. Hospital (72 beds)</i>	Dr. G. B. CHARNOCK
<i>Assistant Tuberculosis Officers</i>	Dr J. N. PARKER, Dr. E. N. RAMSBOTTOM
<i>Tuberculosis Health Visitors</i>	M. EVANS, W. HALL, M. HAWORTH, E. P. MINTO, S. MIDGLEY, E. H. SCOTT, (1 vacancy)
<i>Matron, Withnell Pulm. Hospital</i>	I. M. CORFIELD.
<i>Clerical staff</i>	Three

AREA No. 3 (Population 363,482)

(with dispensaries at Ashton-under-Lyne, Chadderton, Radcliffe and Rochdale)

<i>Consultant Tuberculosis Officer and Visiting Med. Supt., Wolstenholme Pulm. Hospital (58 beds)</i>	Dr. G. FLETCHER
<i>Assistant Tuberculosis Officers</i>	Dr. J. L. ARMOUR, Dr. E. CLIFFORD-JONES
<i>Tuberculosis Health Visitors</i>	G. E. CREBBIN, A. FLYNN, L. M. KROGMAN, M. PANTER, E. SANDHAM, M. SHERWEN, W. SWIFT
<i>Matron, Wolstenholme Pulm. Hosp.</i>	E. GLASS
<i>Clerical staff</i>	Two

AREA No. 4 (Population 350,863)

(with dispensaries at Leigh, Eccles, Farnworth, Pendlebury and Stretford)

<i>Consultant Tuberculosis Officer and Visiting Med. Supt., Peel Hall Pulm. Hospital (58 beds)</i>	Dr. G. JESSEL
<i>Assistant Tuberculosis Officers</i>	Dr. W. FETTES, Dr. G. A. WILTHEW
<i>Tuberculosis Health Visitors</i>	K. BLAKEMORE, A. BOARDMAN, M. GIBSON, D. HEXTER, M. B. JONES, H. M. SHAKES- PEARE, F. G. SMITH
<i>Matron, Peel Hall Pulm. Hospital.....</i>	G. HUGHES.
<i>Clerical staff</i>	Two

AREA No. 5 (Population 327,159)

(with dispensaries at Waterloo, Huyton, St. Helens and Widnes)

<i>Consultant Tuberculosis Officer and Visiting Med. Supt., Rufford Pulm. Hospital (52 beds)</i>	Dr. C. BERRY
<i>Assistant Tuberculosis Officers</i>	Dr. H. J. VILLIERS, Dr. P. HASLAM
<i>Tuberculosis Health Visitors</i>	E. M. CRONE, L. FARQUHAR, M. A. JUDGE, M. J. McKEOWN, A. K. RAYNER, A. E. WEBSTER
<i>Matron, Rufford Pulm. Hospital</i>	J. L. WILLIAMS
<i>Clerical staff</i>	Two

FURNESS AREA (Population 40,190)

(with dispensary at Ulverston)

<i>Consultant Tuberculosis Officer and Med. Supt., High Carley Sana- torium (133 beds) and Oubas House Children's Sanatorium (21 beds).....</i>	Dr. G. LEGGAT
<i>Deputy Medical Superintendent</i>	Dr. C. J. STEWART (Resigned)
<i>Junior Medical Officer</i>	Dr. J. S. LAW
<i>Tuberculosis Health Visitor</i>	F. M. CUMMINGS
<i>Matron, High Carley Sanatorium</i>	A. M. TAYLOR
<i>Clerical staff</i>	Two

FYLDE AREA (Population 97,652)

(with dispensaries at Fleetwood and Elswick Sanatorium)

<i>Consultant Tuberculosis Officer and Med. Supt., Elswick Sanatorium (70 beds)</i>	Dr. A. B. JAMIESON
<i>Assistant Tuberculosis Officer</i>	Dr. D. O. HUGHES (1 day p week)
<i>Tuberculosis Health Visitor</i>	E. WATTERSON
<i>Matron, Elswick Sanatorium</i>	I. FELSTEAD
<i>Clerical staff</i>	Two

WIGAN COUNTY AREA (Population 102,016)

(with dispensary at Wigan)

*Consultant Tuberculosis Officer and
Visiting Physician of the pul-
monary section of Wrightington*

<i>Hospital (74 beds)</i>	Dr. E. H. W. DEANE
<i>Tuberculosis Health Visitors</i>	M. J. EVANS, E. WALTERS
<i>Clerical staff</i>	One

MASS MINIATURE RADIOGRAPHY UNIT

<i>Medical Director</i>	Dr. D. O. HUGHES
-------------------------------	------------------

WRIGHTINGTON HOSPITAL (371 beds)

<i>Medical Superintendent</i>	Dr. J. DOBSON
<i>Deputy Medical Superintendent</i>	Dr. P. E. COSGROVE
<i>Senior Medical Officer</i>	Dr. P. A. MORRIS
<i>Junior Medical Officer</i>	Dr. W. G. TIMMIS
<i>Matron</i>	S. A. HOLMES
<i>Clerk and Steward</i>	H. E. WATSON

CHADDERTON PULMONARY HOSPITAL (44 beds)

<i>Visiting Medical Superintendent</i>	Dr. E. T. HOLDEN
<i>Matron</i>	U. CROSSLEY

HEATH CHARNOCK PULMONARY HOSPITAL (48 beds)

<i>Visiting Medical Superintendent</i>	Dr. J. RIGBY
<i>Matron</i>	H. SINCLAIR

VISITING CONSULTANT SURGICAL STAFF

WRIGHTINGTON HOSPITAL

<i>Orthopaedic Surgeons</i>	{ Professor H. PLATT, Professor T. P. McMURRAY, C.B.E.
<i>Chest Surgeon</i>	Mr. F. R. EDWARDS
<i>Gynaecological Surgeon</i>	Mr. M. M. DATNOW
<i>Ophthalmic Surgeon</i>	Mr. J. A. McCANN
<i>Hon. Urological Surgeon</i>	Prof. C. A. WELLS
<i>Urological Surgeon</i>	Mr. J. COSBIE ROSS
<i>Ear, Nose and Throat Specialist</i>	Mr. G. G. MOWAT
<i>Anaesthetist for chest surgery</i>	Dr. J. HALTON

HIGH CARLEY SANATORIUM

<i>Chest Surgeons</i>	Mr. H. MORRISTON DAVIES, Mr. F. R. EDWARDS
<i>Anaesthetist</i>	Dr. J. HALTON

ELSWICK SANATORIUM

<i>Chest Surgeons</i>	Mr. H. MORRISTON DAVIES, Mr. F. R. EDWARDS
<i>Anaesthetist</i>	Dr. J. HALTON

VISITING DENTAL SURGEONS

High Carley and Oubas House

<i>Sanatoria</i>	Mr. A. MILLER
<i>Elswick Sanatorium</i>	Dr. R. D. ALLISON
<i>Wrightington Hospital</i>	Mr. J. J. WARD

SENIOR ADMINISTRATIVE STAFF

<i>Administrative Assistant</i>	Mr. H. F. HUGHES, M.A., F.S.S.
<i>Chief Steward</i>	Mr. E. W. MANN
<i>Principal Clerks</i>	Mr. J. W. JOLLY, Mr. H. BRAD- SHAW, Mr. I. PARKER.



Digitized by the Internet Archive
in 2017 with funding from
Wellcome Library

<https://archive.org/details/b2971784x>

LANCASHIRE COUNTY COUNCIL.

REPORT
OF THE
CENTRAL TUBERCULOSIS OFFICER
FOR THE YEAR 1944.

To the Chairman and Members of the Lancashire County Council.

LADIES AND GENTLEMEN,

I have the honour to submit the thirty-first annual report on the work of the Tuberculosis Department. This will be my last annual report, and it is not without regret that I cease to occupy a post held since 1913. I have been most fortunate to receive throughout this long period unvarying kindness and help from the members of the County Council, and also the chief officials. I have had a very happy association with the members of the Tuberculosis Committee and its very able chairmen. All will agree that the Committee's good fortune continues with the present Chairman, Dr. P. F. Mannix, who has shouldered a very heavy responsibility during the long war years.

The Lancashire Scheme, during the last thirty-odd years, has been built up by team work. Here I have been deeply indebted to my medical colleagues—especially the seniors. Several who did splendid work (J. L. Stewart, A. D. Brunwin, C. W. Laird, E. H. A. Pask, B. MacPhee and G. H. Leigh) have passed on before my retirement, but fortunately others (G. Jessel, G. Leggat and G. Fletcher), even from the far-off days of 1913 and 1914, still carry on. In spite of two major wars we have the outstanding facts that while in 1913, 112 persons per 100,000 of the population in Lancashire died from all forms of tuberculosis, the corresponding figure for 1944 was 51.

I acknowledge too the support I have had in unstinted measure from all the nursing staff, clerical staff and ground staff at the institutions, dispensaries and head office. At the latter I would like to thank especially my administrative assistant, Mr. H. F. Hughes, and the chief steward, Mr. E. W. Mann, for their most able and unwearying help throughout the whole period of my appointment.

Finally, I extend to my successor, Dr. F. C. S. Bradbury, my congratulations and best wishes for a long, successful and happy term of office.

I am,

Your obedient Servant,

G. Lissaut Cox

Central Tuberculosis Officer.

County Offices, Preston,
31st December, 1945.

DEVELOPMENT AMID DIFFICULTY

The development of the County tuberculosis scheme since 1913 has proceeded despite World War I, the Geddes "axe", the "financial blizzard", World War II, and other retarding factors. Yet at the end of 1945, the scheme is more comprehensive and the institutional accommodation, the number of beds in use, greater than ever before. New work has recently arisen in the form of mass miniature radiography; detailed administration of maintenance allowances (involving now over £50,000 per annum); amalgamation of Blackburn scheme with County; an increase of 70 per cent. in new cases examined compared with ten years past; examination of sanatoria staffs and war-time nursery staffs; measures of or for rehabilitation; and in other directions of medicine, nursing and administration. In 1944 no less than 31.8 per cent. of the total pulmonary cases on the register (4,935) had received thoracic surgery, major or minor, and patients with non-tuberculous chest conditions are now included in the scheme. All sections of the staff have been depleted, none so much as the sanatorium nurses with a grave deficiency of 28 per cent. on establishment in September, 1945.

To keep the scheme going and to assimilate all the additional work has brought out the sterling qualities in all the staffs who have worked long hours of overtime under trying conditions. The sole endeavour has been to carry on notwithstanding controls, rationing, restrictions, and upset, and to see that the patients were treated and cared for in the best possible way under the adverse conditions.

FUTURE OF THE TUBERCULOSIS SERVICE

The White Paper on "A National Health Service" issued by the last Government, indicated that the tuberculosis service would be transferred to the proposed new joint authorities. A new set of proposals are to be issued by the present Government and it is more or less conjecture what they will be.

Meantime the Ministry of Health have published (November, 1945) the Survey on the Hospital Services of the North Western Area, made by Sir Ernest Rock Carling, F.R.C.S., and Dr. T. S. McIntosh; it contains a section dealing with tuberculosis and it is of considerable interest and value to study their views. They state the principles upon which, in their judgment, a scheme should be based:—

- "1. Institutional treatment of Tuberculosis should not be a separate service, but should be part of a comprehensive hospital service. This, of course, does not rule out special Tuberculosis institutions or a special Tuberculosis organisation forming part of a larger whole.
2. At the same time institutional care should be kept in as close relation as possible to the Dispensary and domiciliary supervision of the patient and the preventive and social side of the work.

3. The Tuberculosis Officers of an Area should form a team for the performance of both Dispensary and institutional work and the head of the team should hold the position of chest physician to the Area and should be on the staff of the general hospital, whether the beds under his control are there or in a separate institution."

They consider "These principles could form the basis of a scheme on the lines of the Lancashire County scheme, but with the important difference that the Dispensary Areas would include the County Boroughs as well as the County Districts. Each Dispensary Area should have within it at least what may be called 'local' hospital accommodation for pulmonary tuberculosis, i.e., accommodation for those who should be kept near their homes and who do not require highly specialised treatment. These 'local' establishments will be useful for advanced and observation cases, and for some patients of other grades. Until a substantial building scheme can be undertaken the best will just have to be made of the accommodation at present available, with some relief afforded by Emergency Hospital Scheme huts; *but the combination of County Boroughs and County Districts in one scheme will enable new local institutions of more suitable size to be provided eventually.*" They refer with approval to the amalgamation of the Blackburn tuberculosis scheme with the County. They point out that in the North West only Manchester, Liverpool and Lancashire County are sufficiently large to provide a satisfactory service from their own resources. The inherent defect in the Cheshire scheme is given as the separation of institutional from dispensary care—the opposite of the Lancashire scheme.

The Surveying Officers visited a number of the County sanatoria, hospitals and dispensaries and report that they "are much impressed by the Lancashire Tuberculosis Service and the principles on which it is provided and consider that it may form a useful guide for planning a future organisation."

There are four foundations which I have suggested for an efficient tuberculosis service :

1. A whole-time Consultant Physician for *all* lung conditions and other forms of tubercle working within the framework of the new *big* areas.
2. He should be provided with beds in a hospital or sanatorium to be under his clinical charge. Whenever geographically available these beds to be in teaching hospitals, or other well-sited general hospitals.
3. The out-patient and diagnostic clinics in the charge of the Consultant to have all modern means for diagnosis; the association of the Consultant with environment work to be maintained and implemented in the form of team work, the team to comprise graded specialist medical staff with adequate nursing and clerical staff.
4. His status and salary to be of consultative rank, and as a clinician his salary should not be so widely separated, as it is at present, from his administrative colleagues.

THE PRESENT LANCASHIRE SCHEME

The Administrative County is divided into five large areas, average population 319,000, and three small areas. Each large area is in the charge of a *team* consisting of consultant tuberculosis officer, one or more assistant tuberculosis officers, four to seven tuberculosis health visitors, and clerical staff of two. In each of these areas there is a chief dispensary, two or more branch dispensaries and a sanatorium-hospital containing up to 70 beds for the treatment and isolation of patients near their homes; the consultant tuberculosis officer of the dispensary area acts as the visiting medical superintendent of the sanatorium-hospital.

There are three small dispensary areas, and two of them are in the charge respectively of the medical superintendent of the High Carley Sanatorium (154 beds) and the Elswick Sanatorium (70 beds). Owing to the increase in the number of beds at the Wrightington Hospital, which now total 371, a new arrangement was made whereby the tuberculosis officer in charge of the dispensary area adjoining Wrightington is in clinical charge of beds at this large hospital. The tuberculosis officer has been appointed visiting physician to the pulmonary section of the Wrightington Hospital consisting of 74 beds. This accords with a recommendation in the Government White Paper on a National Health Service that "the [tuberculosis] physician has charge of—and direct access to—hospital and sanatorium beds", and the new arrangement is working very well. These three small areas are each equipped with one dispensary and have one, or two, tuberculosis health visitors; the X-ray and clerical work is done at the institution. Thus each small area with one institution is controlled as in the large areas by a *team*.

All our senior or consultant tuberculosis officers thus have institutional beds like consultants in other branches of medicine, and I lay great stress on this combination of the hospital, dispensary and domiciliary sides of the work because it enables the problem of the prevention and treatment of tuberculosis to be seen whole.

INCIDENCE AND MORTALITY

In 1944 the population of the Administrative County, as estimated by the Registrar-General, was 1,837,800.

The number (1,512) of new pulmonary cases notified in 1944 is the highest since 1930. There has been a gradual increase in the pulmonary incidence from 1939 to 1944 (1,252 notifications in 1939; 1,512 in 1944). Non-pulmonary notifications, however, do not show a similar curve, and for 1944 are the lowest on record. Deaths from pulmonary tuberculosis rose in 1940 and 1941, but have declined since then, remaining nearly stationary in 1942, 1943 and 1944.

The rise in the pulmonary notifications from the onset of the late war compared with the five-year period 1934-38 is 11.8 per cent. (1934-38 average 1,282, 1940-44 average 1,434).

But in 1944 the new pulmonary cases were 59 per cent. of the number notified in 1918 (the fourth year of the 1914-18 war), and the deaths from pulmonary tuberculosis half those reported 26 years ago.

The deaths from pulmonary tuberculosis in 1944 are, with the exception of the year 1943, the lowest on record ; the non-pulmonary deaths show a slight increase on those recorded in the previous year.

At the end of 1944 there were on the dispensary registers 7,958 patients suffering from tuberculosis (pulmonary 4,935, non-pulmonary 3,023). In addition, 116 patients (105 males, 11 females) who were on the dispensary registers are well enough to be serving in H.M. Forces ; their classification was : T.B. minus 38, T.B. plus 16, non-pulmonary 62.

Applications for treatment under the County scheme were received during the year from 1,942 persons, of which number 134 were cases transferred from other authorities. Of the total applicants, 1,358 were diagnosed as suffering from pulmonary tuberculosis and 564 from non-pulmonary tuberculosis. The gross figure, 2,177 statutory notifications, exceeds the applicants because of cases in mental hospitals, removals, etc., which cases do not come on the dispensary registers.

The prevalence of pulmonary tuberculosis among young female adults (aged 15-35) is shown in the new notifications during the past seven years :—1938, 336 new cases ; 1939, 377 ; 1940, 386 ; 1941, 417 ; 1942, 412 ; 1943, 393 ; 1944, 457.

The following table shows since 1913 the new cases of tuberculosis notified each year in the Administrative County together with the case-rate per 1,000 of the population :—

YEAR	Notifications			Case-rate per 1,000 of the population		
	Pulmonary tuberculosis	Non-pulmonary tuberculosis	Tuberculosis (all forms)	Pulmonary tuberculosis	Non-pulmonary tuberculosis	Tuberculosis (all forms)
1913	2,700	1,592	4,292	1.54	0.90	2.45
1914	2,820	1,140	3,960	1.61	0.65	2.26
1915	2,872	1,128	4,000	1.64	0.64	2.28
1916	2,689	1,180	3,869	1.52	0.66	2.19
1917	2,375	1,062	3,437	1.35	0.60	1.96
1918	2,534	885	3,419	1.47	0.51	1.98
1919	2,105	847	2,952	1.21	0.48	1.70
1920	2,084	968	3,052	1.20	0.55	1.76
1921	2,044	899	2,943	1.16	0.51	1.67
1922	1,863	956	2,819	1.05	0.54	1.59
1923	1,937	1,188	3,125	1.09	0.66	1.75
1924	1,972	1,120	3,092	1.10	0.62	1.73
1925	1,846	1,027	2,873	1.03	0.57	1.60
1926	1,828	953	2,781	1.02	0.53	1.55
1927	1,794	1,045	2,839	0.99	0.58	1.57
1928	1,660	956	2,616	0.91	0.52	1.44
1929	1,517	913	2,430	0.83	0.50	1.34
1930	1,527	982	2,509	0.84	0.54	1.38
1931	1,460	862	2,322	0.80	0.47	1.28
1932	1,477	825	2,302	0.81	0.45	1.27
1933	1,453	780	2,233	0.80	0.43	1.23
1934	1,315	774	2,089	0.72	0.42	1.15
1935	1,305	672	1,977	0.71	0.36	1.08
1936	1,248	722	1,970	0.67	0.39	1.06
1937	1,314	745	2,059	0.70	0.40	1.10
1938	1,227	805	2,032	0.65	0.42	1.08
1939	1,252	757	2,009	0.65	0.39	1.05
1940	1,340	715	2,055	0.70	0.37	1.08
1941	1,414	732	2,146	0.73	0.38	1.11
1942	1,447	766	2,213	0.76	0.40	1.17
1943	1,456	778	2,234	0.78	0.42	1.20
1944	1,512	665	2,177	0.82	0.36	1.18

Below are given the number of DEATHS from tuberculosis recorded in 1944, together with the death-rates per 1,000 of the population ; for comparison the average for the five years 1939-43 is also given :—

Pulmonary tuberculosis—	Deaths	Death-rate
1944	773	0·42
5-year average (1939-43)	813	0·42
Non-pulmonary tuberculosis—		
1944	182	0·09
5-year average (1939-43)	195	0·09
All forms—		
1944	955	0·51
5-year average (1939-43)	1,019	0·52

It will be seen that the death-rate in 1944 is the same as the five-year average (1939-43) for both pulmonary and non-pulmonary tuberculosis.

Pulmonary tuberculosis is again more prevalent among males than among females. Allowing for the difference in the population of the sexes, in 1944 for every 100 deaths of females there were 161 deaths of males, and for every 100 female notifications there were 146 male notifications.

The number of deaths from pulmonary tuberculosis in 1944 which escaped notification as tuberculous cases during life (i.e., non-notified fatal cases) was 28, or 3·6 per cent. of the total deaths from pulmonary tuberculosis. Deaths from non-pulmonary tuberculosis during 1944 which escaped notification during life numbered 25 or 13·7 per cent. of the total non-pulmonary deaths.

The following table shows the deaths from pulmonary tuberculosis recorded in the Administrative County during the years 1938-1944 analysed according to sex and age :—

	Deaths from Pulmonary Tuberculosis						
	All Ages	Age Groups—Years					
		0—15	15—25	25—35	35—45	45—65	65 and over
MALES.							
1938	472	2	58	98	99	183	32
1939	479	6	56	89	85	208	35
1940	503	11	57	89	105	197	44
1941	474	4	50	88	115	186	31
1942	442	3	57	86	99	167	30
1943	482	4	57	86	90	202	43
1944	459	5	49	64	90	208	43
FEMALES.							
1938	330	10	100	95	53	62	10
1939	335	10	92	112	48	61	12
1940	373	14	119	100	67	52	21
1941	364	11	105	109	59	62	18
1942	334	8	100	87	54	72	13
1943	283	10	85	79	50	50	9
1944	314	7	96	105	48	41	17

The table below shows the number of deaths registered and the death-rates recorded during the years 1913 to 1944 in the Administrative County :—

YEAR	Deaths			Death-rate per 1,000 of population		
	Pulmonary tuberculosis	Non- pulmonary tuberculosis	Tuberculosis (all forms)	Pulmonary tuberculosis	Non- pulmonary tuberculosis	Tuberculosis (all forms)
1913	1,441	527	1,968	0·82	0·30	1·12
1914	1,523	572	2,095	0·87	0·32	1·19
1915	1,614	555	2,169	0·96	0·34	1·30
1916	1,685	471	2,156	1·04	0·29	1·33
1917	1,584	466	2,050	1·00	0·30	1·30
1918	1,652	435	2,087	1·07	0·28	1·35
1919	1,339	358	1,697	0·80	0·22	1·02
1920	1,323	396	1,719	0·76	0·23	0·99
1921	1,301	376	1,677	0·73	0·21	0·95
1922	1,362	389	1,751	0·77	0·22	0·99
1923	1,250	412	1,662	0·70	0·23	0·93
1924	1,215	339	1,554	0·68	0·19	0·87
1925	1,205	361	1,566	0·67	0·20	0·87
1926	1,158	286	1,444	0·64	0·16	0·80
1927	1,105	296	1,401	0·61	0·16	0·77
1928	1,066	287	1,353	0·58	0·15	0·74
1929	1,102	279	1,381	0·60	0·15	0·76
1930	1,046	253	1,299	0·57	0·14	0·71
1931	1,021	266	1,287	0·56	0·14	0·71
1932	975	238	1,213	0·54	0·13	0·67
1933	1,010	232	1,242	0·55	0·12	0·68
1934	848	231	1,079	0·46	0·12	0·59
1935	855	189	1,044	0·46	0·10	0·57
1936	856	192	1,048	0·46	0·10	0·56
1937	865	198	1,063	0·46	0·10	0·57
1938	802	177	979	0·42	0·09	0·52
1939	814	195	1,009	0·42	0·10	0·52
1940	876	188	1,064	0·46	0·09	0·55
1941	838	221	1,059	0·43	0·11	0·55
1942	776	196	972	0·41	0·10	0·51
1943	765	177	942	0·41	0·09	0·50
1944	773	182	955	0·42	0·09	0·51

Deaths of children from pulmonary and from non-pulmonary tuberculosis during the years 1928 to 1944 are shown below :—

Deaths from Tuberculosis among Children in the Administrative County.

	5-year average				
	1928-32	1933-37	1938-42	1943	1944
Pulmonary tuberculosis—					
Aged 0—5 years	7	3	7	8	8
Aged 5—15 years	22	15	9	6	4
Non-pulmonary tuberculosis—					
Aged 0—5 years	75	57	59	56	66
Aged 5—15 years	43	34	25	27	22

NOTES ON THE TYPING OF TUBERCLE BACILLI AND A HUMAN CASE OF AVIAN TUBERCULOSIS

by F. C. S. Bradbury, M.D., D.P.H.

The writer has carried out routine typing of most positive specimens of sputum, pus, etc., dealt with in the Preston (County) dispensary laboratory during the past six years, basing the technique on culture methods. For this purpose numerous special media have been devised which, by methods of trial and error, have been found to possess the property of differentiating various types of tubercle bacilli by their appearance after a standard period of three weeks' growth.

When culture methods first began to be used extensively, the emphasis as regards distinction of type was placed on the minute appearances of the growth on a standard medium. The writer's method differs in placing the emphasis on the general (and in some cases the minute) appearances produced on a number of special media. Thus a particular strain of tubercle bacillus may by its growth on medium A suggest a human type. This may or may not be borne out by its appearance on media B, C, D, etc. It is the sum of these characters which is used by the writer as the basis of typing. The value of this method has already been shown by the discovery of several strains of acid-fast organisms which failed to satisfy *all* the criteria which the writer uses for the various types of tubercle bacilli. In some of these cases animal inoculation tests have shown that the organism concerned was not a tubercle bacillus at all.

In devising the various differential media the method used was to obtain tubercle bacilli of known type (e.g., bovine bacilli by using naturally infected milk samples) and then to observe their behaviour on various culture media. Occasionally a medium was found on which the various types gave different kinds of growth, with sufficiently constant characters to serve as means of recognising the type.

It will be realised that the degree of accuracy which can be attained by typing in this manner is very high. Supposing that the accuracy of the results with any one medium was as low as 66 per cent., the error would be 1 in 3. Using two different media with the same order of accuracy, the error would be only 1 in 9—i.e., both media would happen to give a wrong indication only once in nine trials. Similarly using three such media the error would be 1 in 27, and it is evident that by using a sufficient number of media the error can be made very small indeed.

As a result of using these methods the writer had the unusual experience of observing a case of pulmonary tuberculosis in which the infecting organism was of the avian type. This diagnosis was repeatedly confirmed by culture methods and by independent animal inoculation tests. An account of the case, which is the first to be reported in this country, will be published in the *Lancet*.

The clinical course of the case shows no special characters which distinguish it from infections with human or bovine type bacilli, but a point of great interest is that the patient reacts markedly to avian tuberculin and not at all to human tuberculin in strengths up to 1 in 1,000.

It is not suggested that routine typing of tubercle bacilli would be worth while for the sake of discovering the odd case of avian infection, but it would perhaps be of interest to consider the possibility of avian infection when certain of the clinical and X-ray features suggest tuberculosis and yet the ordinary mammalian tuberculin reaction is negative. It may be noted that the first positive sputum result in the case of avian infection was obtained by culture of a specimen which was microscopically negative.

TABLE A

DISPENSARY ORGANISATION

AREAS, MEDICAL STAFF, NURSING STAFF,
DISPENSARIES, AND TIMES OF
DISPENSARY SESSIONS

JANUARY, 1946

LANCASHIRE COUNTY COUNCIL.

Table A.—List of Tuberculosis Dispensaries in use in January, 1946, and the Tuberculosis Officers for the Dispensary Areas.

DISPENSARY AREA	DISTRICTS.			Estimated POPULATION 1944.	Area MEDICAL STAFF January, 1946	NURSING STAFF.	DISPENSARIES.	Days and Hours of DISPENSARY SESSIONS (Distinct from Home Visiting, attending Sanatoria, Hospitals and Care Committees, etc.).
1	Adlington Blackrod Carnforth Chorley (B.) Chorley (R.) Fulwood Garstang (R.), part of consisting of parishes of— Barnacre-with-Bonds Bilsborrow	Garstang (R.) cont. Bleasdale Cabus Catterall Cloughton Forton Garstang Kirkland Myerscough Sateby Nether Wyresdale Winmarleigh	Horwich Lancaster (B.) Lancaster (R.) Leyland Longridge Lunesdale (R.) Morecambe & Heysham (B.) Preston (R.) Walton-le-Dale Withnell	266,848	Consultant Tuberculosis Officer— Dr. F. C. S. Bradbury The Dispensary, 8, Middle Street, Lancaster. Assistant Tuberculosis Officer— Dr. C. V. Stevenson.	Nurse G. M. Hunter Nurse A. Dickinson Nurse I. Wilkinson Nurse N. Ledsham	LANCASTER (Chief), 8, Middle Street (Tel. No. 568). (X-ray and Artificial Light Apparatus). CHORLEY (Branch), 34, St. Thomas's Road (Tel. No. 2763). (X-ray and Artificial Light Apparatus). PRESTON (Branch), 12, Walton's Parade (Tel. No. 2910). (X-ray and Artificial Light Apparatus).	Monday, 10 a.m. Other days and evenings by appointment. Tuesday, 10 a.m. Other days and evenings by appointment. Wednesday, 10 a.m. Other days and evenings by appointment.
2	Accrington (B.) Bacup (B.) Barrowford Blackburn (R.) Brierfield Burnley (R.) Church	Clayton-le-Moors Clitheroe (B.) Clitheroe (R.) Colne (B.) Darwen (B.) Great Harwood Haslingden (B.)	Nelson (B.) Oswaldtwistle Padiham Rawtenstall (B.) Rishton Trawdon Turton	289,590	Consultant Tuberculosis Officer— Dr. G. B. Charnock, The Dispensary, High Lea, 108a, Whalley Road, Accrington. Assistant Tuberculosis Officers— Dr. J. N. Parker Dr. E. N. Ramsbottom (Temporary)	Nurse W. Hall Nurse M. Haworth Nurse E. P. Minto Nurse E. H. Scott Nurse S. Midgley Vacancy Nurse M. Evans	ACCINGTON (Chief), High Lea, 108a, Whalley Road (Tel. No. 2443). (X-ray and Artificial Light Apparatus). DARWEN (Branch), 20, Railway Road (Tel. No. 408). NELSON (Branch), 64, Carr Road (Tel. No. 507). (Artificial Light Apparatus). STACKSTEADS (Branch), Knott Hill House (Tel. No. Bacup 201). (Artificial Light Apparatus). BLACKBURN, 40, Duke Street (Tel. No. 6644) (X-ray and Artificial Light)	Tuesday, 1-30 p.m. Wednesday, 1-30 p.m. Monday, 10 a.m. Tuesday, 1-30 p.m. Friday, 10-30 a.m. Friday, 10 a.m. Monday, 9-30 a.m. to 12 noon and 1-30 to 3-30 p.m. by appointment. Wednesday, 10 a.m. to 12 noon; 1-30 to 3-30 p.m.—X-ray exams; by appointment.
3	Ashton-under-Lyne (B.) Audenshaw Chadderton Crompton Denton Droylsden Failsworth Heywood (B.)	Lees Limehurst (R.) Littleborough Middleton (B.) Milnrow Mossley (B.) Prestwich (B.) Radcliffe (B.)	Ramsbottom Royton Tottington Wardle Whitefield Whitworth	363,482	Consultant Tuberculosis Officer— Dr. G. Fletcher, The Dispensary, Lees Street, Ashton-under-Lyne. Assistant Tuberculosis Officers— Dr. J. L. Armour Dr. E. Clifford-Jones	Nurse W. Swift Nurse M. Sherwen Nurse M. Panter Nurse L. M. Krogman Nurse G. E. Crebbin Nurse A. Flynn Nurse E. Sandham	ASHTON-UNDER-LYNE (Chief), Lees Street (Tel. No. 1775). (X-ray and Artificial Light Apparatus). CHADDERTON (Branch), Brook Street (Tel. No. Main 1671). RADCLIFFE (Branch), 41, Darbyshire Street (Tel. No. 2323). (Artificial Light Apparatus). ROCHDALE (Branch), 168, Drake Street (Tel. No. 3892).	Monday, 10-30 a.m., X-ray exams. Tuesday, 2-30 p.m. Friday, 10 a.m. 1st Tuesday of month, 6-30 p.m. Monday, 2 p.m. Wednesday, 10 a.m. 2nd Monday of month, 6-30 p.m. Wednesday, 2 p.m. 3rd Wednesday of month, 6-30 p.m. Thursday, 10-30 a.m. 2nd Thursday of month, 6-30 p.m.
4	Atherton Eccles (B.) Farnworth (B.) Golborne Irlam Kearsley	Leigh (B.) Little Lever Stretford (B.) Swinton and Pendlebury (B.) Tyldesley	Urmston Westhoughton Worsley	350,863	Consultant Tuberculosis Officer— Dr. G. Jessel, The Dispensary, 13, Church Street, Leigh. Assistant Tuberculosis Officers— Dr. W. Fettes Dr. G. A. Wilthew	Nurse A. Boardman Nurse H. M. Shakespeare Nurse M. Gibson Nurse D. Hexter Nurse F. G. Smith Nurse M. B. Jones Nurse K. Blakemore	LEIGH (Chief), 13, Church Street (Tel. No. 258). ECCLES (Branch), 28 & 30, Gilda Brook Road (Tel. No. 3533). (X-ray and Artificial Light Apparatus). FARNWORTH (Branch), 19-23, Darley Street (Tel. No. 63). PENDLEBURY (Branch), 121, Station Road (Tel. No. Swinton 1895). STRETTFORD (Branch), 14, Derbyshire Lane (Tel. No. Longford 2010).	Wednesday, 10 a.m. Friday, 10 a.m. 2nd Wednesday of month, 6-30 p.m. Tuesday, 2 p.m.; 2-30 p.m., X-ray exams. Thursday, 2-30 p.m., X-ray exams. Friday, 10 a.m.; 2-30 p.m. X-ray exams, 1st Wednesday of month, 6-30 p.m. Tuesday, 10 a.m. Friday by appointment. 3rd Wednesday of month, 6-30 p.m. Monday, 2 p.m. Last Thursday of month, 6-30 p.m. Tuesday, 10 a.m. Thursday, 10 a.m. Last Monday of month, 6-30 p.m.
5	Crosby (B.) Formby Haydock Huyton-with-Roby Litherland	Newton-le-Willows Ormskirk Prescot Rainford Skelmersdale	Warrington (R.) West Lancashire (R.) Whiston (R.) Widnas (B.)	327,159	Consultant Tuberculosis Officer— Dr. C. Berry, The Dispensary, "Ellesmere", Crosby Road North, Waterloo. Assistant Tuberculosis Officers— Dr. H. J. Villiers Dr. P. Haslam	Nurse M. J. McKeown Nurse E. M. Crone Nurse M. A. Judge Nurse L. Farquhar Nurse A. E. Webster Nurse A. K. Rayner	WATERLOO (Chief), "Ellesmere" Crosby Road North (Tel. No. Waterloo 688). (X-ray and Artificial Light Apparatus). HUYTON (Branch), 14, Blue Bell Lane (Tel. No. 383). (Artificial Light Apparatus). ST. HELENS (Branch), 90, Hardshaw Street (Tel. No. 3916). (Artificial Light Apparatus). WIDNES (Branch), Chapel Street (Tel. No. 2156). (X-ray and Artificial Light Apparatus).	Monday, 2 p.m. Wednesday, 2 p.m. Thursday, 10 a.m., X-ray exams. Evenings by appointment. Tuesday, 2 p.m. Thursday, 2 p.m. Evenings by appointment. Tuesday, 2 p.m. Evenings by appointment. Monday, 10 a.m. to 12 noon. Friday, 2 to 4 p.m. Evenings by appointment.
Furness	Dalton-in-Furness Grange-over-Sands	Ulverston	Ulverston (R.)	40,190	Consultant Tuberculosis Officer— Dr. G. Leggat, High Carley Sanatorium, near Ulverston (Tel. No. Ulverston 110).	Nurse F. M. Cummings	ULVERSTON, 69, Albion Place, Lightburn Avenue (Tel. No. 145). (Artificial Light Apparatus). (X-ray Apparatus at High Carley Sanatorium).	Tuesday, 10 a.m. Thursday, 10 a.m.
Fylde	Fleetwood (B.) Fylde (R.) Garstang (R.), part of consisting of parishes of— Great Eccleston Hambleton	Garstang (R.) cont. Inskip-with-Sowerby Oat Rawcliffe Pilling Stalmine-with-Stainall Upper Rawcliffe	Kirkham Lytham St. Annes (B.) Poulton-le-Fylde Preesall Thornton Cleveleys	97,652	Consultant Tuberculosis Officer— Dr. A. B. Jamieson, Elswick Sanatorium, near Kirkham. Assistant Tuberculosis Officer— Dr. D. O. Hughes (1 day per week)	Nurse E. Watterson	FLEETWOOD, 23, Poulton Road (Tel. No. 282). (X-ray and Artificial Light Apparatus). ELSWICK Sanatorium, near Kirkham (Tel. No. Great Eccleston 22). (X-ray Apparatus).	Tuesday, 9 a.m. Wednesday, 2 to 3 p.m. by appointment.
Wigan County	Abram Ashton-in-Makerfield Aspull Billinga and Winstanley	Hindley Ince-in-Makerfield Orrell Standish-with-Langtree	Upholland Wigan (R.)	102,016	Consultant Tuberculosis Officer— Dr. E. H. W. Deane, Wrightington Hospital, Appley Bridge, near Wigan (Tel. No. Appley Bridge 338).	Nurse E. Walters Nurse M. J. Evans	WIGAN, 3, Mesnes Park Terrace (Tel. No. 3172). (X-ray and Artificial Light Apparatus).	Monday, 9-30 a.m. Thursday, 9-30 a.m. Evenings by appointment.
				Acreage 40,960				
				Total acreage of Admin. County	1,037,662			
				Blackburn	8,080	1,837,800		
						102,630		

850.12/45.03854.T8830.

TUBERCULOSIS DEPARTMENT,
COUNTY OFFICES,
PRESTON. (Tel. 4868)

MASS RADIOGRAPHY UNIT (Commenced operations 11th October, 1943).
MEDICAL DIRECTOR Dr. D. O. HUGHES.
ORGANISING SECRETARY Mr. A. L. WRIGHT.
SENIOR RADIOGRAPHER Miss W. M. KENT.

G. LISSANT COX,
Central Tuberculosis Officer.

The writer has observed a few cases of pulmonary tuberculosis in which both human and bovine tubercle bacilli were present, and in one of these the predominance of one or other type varied in different specimens of sputum. About four per cent. of positive sputum specimens have proved to be of bovine type, but this figure is not necessarily a true index of the extent of bovine infection in pulmonary tuberculosis in Lancashire, since the material dealt with may not have been a strictly random sample.

Another interesting finding was the discovery of a bovine infection in a man suffering from pulmonary tuberculosis, and a human infection in his wife who was in sanatorium at the same time. This finding appeared to settle the question of which one of this pair had infected the other, since apparently each had been infected from a separate source.

A further development of cultural methods of typing which the writer is still exploring is the possibility of correlating virulence with cultural characters. It is found that human tubercle bacilli fall broadly into two unequal groups as regards their appearance on a particular culture medium. Approximately nine out of ten produce a yellow growth: the other produces a blue growth. It appears to be the case that the type which produces the blue growth is associated with a chronic and relatively benign clinical course, but precise information on this point can only be obtained after a prolonged period of follow-up of the patients concerned.

A subsidiary use for this "virulence" test is in obtaining evidence of the probable source of infection in a given case. If the supposed secondarily infected case is of the "virulent" type and the supposed infecting case is found to be of the "non-virulent" type, the inference may perhaps be drawn that the one has not infected the other. The writer has already been able to make use of this aspect of typing in a few cases.

It is suggested that in view of the simplicity of routine typing of tubercle bacilli this procedure should be undertaken on as large a scale as possible, in view of the valuable information which may be derived from it.

CO-OPERATION WITH COUNTY BOROUGHS AND THE ISLE OF MAN

The County Council, by agreement with the Blackburn County Borough Council, undertook responsibility for the Borough tuberculosis scheme as from the 1st July, 1944.

Blackburn has consequently been assimilated in Dispensary Area 2, raising the population of 289,590 by 102,630. Dr. G. Barker Charnock, the Consultant Tuberculosis Officer for Area 2, is therefore responsible for the tuberculosis scheme in the Borough, including X-ray examinations, artificial light treatment, A.P. refills, etc. During the second half of 1944, 193 new Borough patients were examined. At the end of the year there were 498 patients on the Blackburn dispensary register, of which 61 were undergoing institutional treatment.

The financial arrangements, which are subject to amendment by mutual agreement, provide for the Borough Council to re-imburse the County Council for dispensary treatment and supervision and for Central Office expenses on a population basis. For the institutional treatment of Blackburn patients, the Corporation administer their Park Lee Hospital (32 beds for pulmonary cases) and bear the cost thereof. Otherwise, the institutional accommodation required for Borough patients is provided by the County Council, the Corporation paying the operative maintenance rate at the institutions concerned.

The agreement is for a period of three years and thereafter determinable by twelve months' notice on either side.

This co-operation between a county borough and the County Council has proceeded quite satisfactorily, and will be, we may hope, the forerunner of still more joint work with other county boroughs in the near future.

Co-operation on sections of the tuberculosis scheme, e.g., institutional treatment, major thoracic surgery, artificial pneumothorax refills, exists with several of the Lancashire County Boroughs, namely, Southport, Bootle, Preston, etc., and with the Isle of Man Local Government Board.

With regard to the last-named, one of our tuberculosis officers (Dr. J. L. Armour) visits the island monthly to examine patients and to supervise their treatment at the dispensary and the sanatorium; Manx patients requiring specialised treatment are brought to our Lancashire institutions.

MAINTENANCE ALLOWANCES FOR TUBERCULOUS PATIENTS AND THEIR DEPENDANTS

The Government scheme for tuberculosis authorities to grant allowances to certain classes of patients suffering from pulmonary tuberculosis and their dependants was put into operation in the Administrative County (a) on the 14th June, 1943, for maintenance allowances, and (b) on the 28th June for discretionary allowances and special payments.

The following statement shows the work done during 1944 in respect of County and Blackburn patients :—

Applications received	Maintenance Allowances	Discretionary Allowances	Special Payments
Eligible and assessment made	756	150	81
Ineligible according to conditions of Memo. 266/T of Ministry of Health	147	106	47
TOTAL	<u>903</u>	<u>256</u>	<u>128</u>

Average grant per week per eligible applicant :	£	s.	d.
Maintenance allowances (including winter fuel)	1	6	5
Discretionary allowances	0	3	5
Special payments (excluding free travel vouchers)	0	7	1
Net amount of allowances paid to patients or dependants :			
Maintenance allowances	44916	12	1
Discretionary allowances	919	1	2
Special payments	745	5	0
Total net amount paid during 1944	46580	18	3
Total number of individual patients in receipt of allowances of one kind or another on the 31st December, 1944			681

On the 1st October, 1945, there were 677 individual patients (County 647, Blackburn 30) receiving allowances—Maintenance allowances 660, discretionary allowances 179, special payments 48.

The allowances have proved successful so far as they go, but there is undoubted need for amendment by way of improving the scale, particularly for children, and by extending the eligibility for allowances to advanced cases and non-pulmonary cases.

WORK OF THE DISPENSARY ORGANISATION

Attention is drawn in the following statement to the very large increases in new cases examined, X-ray examinations, and artificial pneumothorax refills when the years 1944 and 1934 are compared. The increase in new cases reflects the ever-growing use made by general practitioners of our consultant physicians for all kinds of chest complaints, tubercular and non-tubercular. Increases in artificial pneumothorax refills are a measure of the importance of surgery in the treatment of pulmonary tuberculosis :—

	1934	1943	1944
New cases examined	4,418	7,240	7,426
New contacts examined	908	1,268	1,579
Re-examinations of "old" patients and "old" contacts	23,340	29,142	31,621
Patients' attendances at dispensaries	23,575	34,289	37,544
Visits by tuberculosis officers to patients' homes	5,091	3,361	3,082
X-ray examinations made in connection with dispensary work	10,137	22,692	24,441
Sputum examinations made in connection with dispensary work	6,736	9,319	9,771
Artificial pneumothorax refills given at the dispensaries	2,012	5,798	6,717
Patients' dispensary attendances for artificial light treatment	29,465	22,671	19,709
Consultations with medical practitioners—			
Personal	700	394	344
Other	5,547	8,256	8,575
Examinations of persons referred by Medical Boards under the National Service (Armed Forces) Act, 1939	—	912	612
Examinations of entrants to industry under the Sandstone (Silicosis) Scheme, 1929	30	3	2
Visits by tuberculosis health visitors to patients' homes	41,167	40,119	36,929

All this work has gone on, increasing in amount throughout the war and is a measure of what has been done for the prevention and treatment of tuberculosis and a very big contrast with what was done in the previous war.

A more detailed return of some of the work of the dispensaries shown above during the year 1944 is given on page 20.

THORACIC SURGERY AT THE DISPENSARIES AND INSTITUTIONS

Thoracic surgery, major and minor, continues to play its very important part in the treatment of pulmonary tuberculosis and also non-tuberculous diseases of the chest. Mr. H. Morrision Davies, visiting consultant chest surgeon, and his assistant, Mr. Ronald Edwards, have been able to continue their regular visits to the High Carley and Elswick Sanatoria, not without much difficulty owing to the war. Now that pulmonary cases are treated at the Wrightington Hospital, Mr. Edwards undertakes major thoracic surgery at this institution, and the result has been a big increase in operations for thoracoplasty, burning of adhesions and other operations. Patients are sent to Elswick Sanatorium for assessment by Mr. Davies as to fitness for thoracic surgery after a preliminary sorting at the monthly clinic described below.

Mr. Morrision Davies holds a very valuable regular—usually monthly—clinic at the County Offices, Preston, at which cases for thoracic surgery, tuberculous and *non-tuberculous*, are brought forward by the County tuberculosis medical staff for discussion, diagnosis or advice. Tuberculosis officers of many of the Lancashire county boroughs and others also bring forward cases for Mr. Davies' opinion at this clinic. The case histories and X-ray films provide the basis of most interesting discussions as to diagnosis and treatment for patients, and the Lancashire County Council have been fortunate to have had this work carried on throughout the war.

At the dispensaries a great many refills for artificial pneumothorax treatment are carried out. Thus at the end of 1944, 321 patients were receiving artificial pneumothorax treatment at the dispensaries and refills for the year totalled 6,717. And now in 1945 pneumoperitoneum refills are being done.

The following statement shows the amount of thoracic surgery done at our institutions and the big increase during 1944 compared with the average for the preceding three years :—

	1944	3-year average 1941-43
Thoracoplasty operations	86	41
Monaldi operations	1	3
Extra-pleural pneumothorax.....	—	2
Phrenic nerve operations	51	57
Thoracoscopy examinations	72	32
Thoracoscopy and division of adhesions	109	59
Bronchoscopy examinations	19	13
Pneumoperitoneum—		
Inductions	19	5
Refills	347	37
Artificial pneumothorax—		
Inductions	313	251
Refills	7,007	6,406

A census of the 4,935 pulmonary patients (adults, children, males, females, early, intermediate and advanced stages) on the dispensary registers at the end of 1944 showed that 1,573, or 31.8 per cent., had either received major or minor surgical treatment for their chest condition or such treatment had been attempted. This is the first year this figure had reached, and indeed exceeded, thirty per cent.

NON-TUBERCULOUS CHEST CONDITIONS

Non-tuberculous chest cases, e.g., carcinoma, empyema, abscess, bronchiectasis, aneurism, are sent in the first instance by general practitioners to the dispensaries where they are examined and reported on by the County tuberculosis medical staff, and, if necessary, the cases are discussed at the clinic described above. Then, after confirmation by Mr. Morriston Davies, arrangements may be made on behalf of the County Medical Officer of Health for treatment by Mr. Davies at the Chest Centre, Broadgreen Hospital, Liverpool. Alternatively, for any urgent case the tuberculosis officer makes direct communication with Mr. Davies.

Below is given the number of such patients admitted during 1944, together with the diagnosis :—

Aneurism of aorta, 1 ; bronchiectasis, 13 ; bronchitis, 1 ; bronchial carcinoma, 6 ; carcinoma of lung, 3 ; empyema, 2 ; lung abscess, 4 ; neoplasm of lung, 1 ; mediastinal tumour, 2 ; pleurisy, 2 ; pneumonitis, 1.

X-RAY EXAMINATIONS

An X-ray plant is provided for the consultant tuberculosis officer of each of the five large areas at one or more dispensaries ; in the three small areas attached to the larger institutions the X-ray work is carried out at the institution of which the medical superintendent is also the area consultant tuberculosis officer. All County sanatoria and hospitals, large or small, have an X-ray apparatus.

Below is given the X-ray work done in 1944 compared with 1934 and 1943 :—

	Screen Examinations			Skiagrams		
	1934	1943	1944	1934	1943	1944
At dispensaries	3,408	10,373	11,500	6,729	12,319	12,941
At sanatoria and hospitals	4,426	9,168	10,509	3,914	5,799	6,679

MASS MINIATURE RADIOGRAPHY

The Lancashire mass miniature radiography unit commenced operations in October, 1943, being the first among the local authorities in the country. The system of working, the staff, and the description of the apparatus were given in my annual report for 1943.

The unit is not mobile in the sense that it can move about freely, but it is transportable.

For the initial miniature examination the "works address" determines whether the County Council or a County Borough bear the expense; when treatment is required cases are referred to the "home address" authority.

No diagnosis of tuberculosis is made on the miniature film alone.

Up to December, 1945, the unit had undertaken eight separate surveys—one in the County Borough of Warrington, for which the Corporation defrayed the cost, two at Royal Ordnance factories, four at industrial establishments, and one at a County mental hospital.

The results of each survey are worked out and later a further special report will be prepared which will give full statistics including the number of cases of tuberculosis discovered.

Dr. D. Osborne Hughes took over the duties of Medical Director on the 1st January, 1945, in succession to Dr. J. N. Whyte who was appointed to a similar post in Belfast.

EXAMINATION OF RECRUITS

The civilian medical boards, set up under the National Service (Armed Forces) Act, 1939, for the examination of recruits, co-operate with local authorities by sending men and women suspected to be suffering from tuberculosis to the tuberculosis officers for a special examination, including X-ray.

The following table shows the number of recruits examined by the County tuberculosis officers during the years 1940-44 :—

	1940	1941	1942	1943	1944
Total number of recruits referred by medical boards	614	868	861	912	612
Number of above who were known to the County tuberculosis officers	78	131	163	103	80
Net number of recruits examined by County tuberculosis officers for first time	536	737	698	809	532
Number found to be suffering from tuberculosis—					
Active cases	27 (5.0%)	15 (2.0%)	15 (2.1%)	18 (2.2%)	7 (1.3%)
Quiescent cases	15 (2.7%)	19 (2.5%)	4 (0.5%)	1 (0.1%)	7 (1.3%)
Number not previously known to County tuberculosis officers but who had received treatment under another authority—					
Active cases	3	3	3	6	2
Quiescent cases	—	6	8	3	1

The total number of recruits examined by the medical boards during this period is not known.

PATHOLOGICAL LABORATORY

This laboratory at the High Carley Sanatorium, opened in March, 1942, was established for the Emergency Hospital Service and the Public Health Service in the Furness area, including Barrow-in-Furness.

For providing these laboratory facilities the County Council charge a nominal rental ; certain pathological work connected with the County tuberculosis scheme is carried out at the laboratory without charge.

During 1944 a total of 9,650 specimens were examined.

TUBERCULOUS PENSIONERS

Of the 7,958 patients under the supervision of the dispensary staff at the end of 1944, 549 were persons discharged from H.M. Forces and, from January, 1943, the Merchant Navy, whose disease was held by the Ministry of Pensions to be attributable to war service (22 being in respect of the 1914-18 War).

The cost of their institutional treatment and travelling expenses to and from institutions is met out of the funds of the Ministry of Pensions, to whom detailed claims for refund are accordingly submitted from time to time.

INSTITUTIONAL ACCOMMODATION AND WAITING LIST

For the year 1944 the average accommodation for *County* patients at tuberculosis institutions was as follows : Pulmonary tuberculosis 822 beds, non-pulmonary tuberculosis 248 beds, total 1,070*.

When the necessary nursing and domestic staff is available, further beds at the Wrightington Hospital can be brought into use.

From time to time, when there are no suitable patients on the County waiting list, beds are let to county borough councils. During 1944 the average number of beds let to other authorities, including H.M. Forces, was : Pulmonary 77, non-pulmonary 21.

In relation to population and deaths, the 1,070-bed accommodation provides the following :—

Pulmonary tuberculosis	1 bed per 2,235 of the population or 106 beds per 100 pulmonary deaths.
Non-pulmonary tuberculosis.....	1 bed per 7,410 of the population, or 136 beds per 100 non-pulmonary deaths.

The waiting list, averaged at monthly periods during the year, was as follows :—

Pulmonary tuberculosis	Males 41, females 42.
Non-pulmonary tuberculosis.....	Males 12, females 11.

* This figure is exclusive of the beds occupied by Blackburn cases.

The position in December, 1944, was : Pulmonary tuberculosis—males 20, females 19 ; non-pulmonary tuberculosis—males 15, females 5. For interest the figures for December, 1945, were : Pulmonary—males 62, females, 16 ; non-pulmonary—males 22, females 22 ; total, 122.

To eliminate the waiting list for pulmonary tuberculosis more beds are required. It would appear that the position would be met by the provision of a new sanatorium (with a major thoracic unit) to contain 150 to 200 beds and centrally situated. For non-pulmonary tuberculosis, additional beds—preferably at the Wrightington Hospital—are required. The number will depend on future arrangements with the county boroughs.

Additional accommodation has been secured under arrangements with the Aspull, Blackrod and Horwich Joint Hospital Board by the use of a pavilion containing 25 beds at the Fall Birch Isolation Hospital, Lostock, near Bolton, for female patients suffering from pulmonary tuberculosis.

On the other hand, 25 beds at the Ormskirk Isolation Hospital and 30 beds at the Lancaster Isolation Hospital (in a pavilion adjoining the pulmonary hospital) have had to be given up owing to the accommodation being required for its original purpose.

During the year, 1,565 County patients suffering from pulmonary tuberculosis were admitted to sanatoria and pulmonary hospitals, 1,303 were discharged, and 255 died in the institutions ; in addition, 68 observation cases were admitted, 76 were discharged, and one died from a non-tuberculous disease.

Admissions of County patients suffering from non-pulmonary tuberculosis to general and special hospitals during 1944 totalled 353, the discharges numbered 337, and 24 patients died in the institutions ; 46 observation cases were also admitted, 44 were discharged, and one died from non-tuberculous disease.

SHORTAGE OF INSTITUTIONAL STAFF

(a) *Nursing*

The situation caused by the shortage of nursing staff at County sanatoria and hospitals reached serious proportions as in the rest of the country. Repeated efforts have been made through the Ministry of Labour and National Service and the Ministry of Health, and their Regional Officers, to engage additional nurses but it was found impossible to obtain them in sufficient number.

For the purpose of considering the general position as affecting all the County medical services, a joint meeting of representatives of the Public Health and Housing Committee, the Lancashire Public Assistance Committee, the County Tuberculosis Committee and the Lancashire Mental Hospitals Board was convened by the Clerk of the County Council, as a result of which a deputation was appointed to wait upon the Minister of Labour and National Service and the Minister of Health, along with representatives of the Lancashire Group of Members of Parliament.

The deputation was received on the 26th April, 1945, and emphasised the serious position which had arisen, the possibility of it becoming more acute, and the need for Government action to assist local authorities to overcome the problem. The following suggestions for improvement were made as regards tuberculosis nursing :—

(a) Priority on demobilisation (or, to prevent possibility of abuse, leave pending demobilisation) from H.M. Forces for girls who have expressed a wish to take up nursing (particularly sanatorium-nursing) and who have been accepted by the matron of a particular sanatorium or hospital.

(b) Girls from H.M. Forces with two or three years' service in hospital nursing in the Forces to be allowed some concession (e.g., the remission of, say, one year of their training at a general hospital) to induce them to take up civilian nursing.

(c) The Assistant Nurses' Roll to be kept open for girls now in H.M. Forces who have done some nursing and who do not wish to go in for general training in a civilian hospital.

(d) Sanatorium nurses should have a Supplementary Part of the Nurses' State Register (as recommended by the Rushcliffe Committee and others) and so up-grade this important section of nursing. (The certificate of the Tuberculosis Association to admit to Registration.)

(e) The Rushcliffe scale of salaries for student nurses, assistant nurses and possibly for staff nurses should be improved so as to induce more girls to enter sanatorium-nursing and to give them tangible recognition or compensation for the unattractiveness of the work and conditions.

(f) Nurses not now fully employed in industrial establishments should be directed, or at least asked to volunteer, for sanatorium-nursing where their services would be of greater value.

(g) Any action by the General Nursing Council in regard to reorganisation which would have the effect of impeding recruitment of nurses to be postponed.

On behalf of the Ministry of Labour it was stated that, while the need for nurses was a "first priority", there was at that moment no surplus labour in civilian war work which could be transferred to the hospitals; that in the Services there was still a great shortage; and that the position had arisen as a result of the nursing profession carrying both Services and civilian requirements and the calls for other employment for women.

As to the direction of women for nursing, the deputation was informed that this had been rejected by the Cabinet.

It was generally agreed that the most serious position was in respect of specialised institutions, such as tuberculosis. The deputation was assured that everything possible would be done to alleviate the problem which was one affecting the whole country.

The Ministries have since initiated a publicity campaign for nurses, particularly sanatorium nurses, and towards the end of 1945 carried out a campaign to induce women leaving the Services to enter the nursing profession.

On the 1st September, 1945, there was a shortage of 28 per cent. in the nursing staff at our tuberculosis institutions; the position is made worse by the fact that substitute staff for holiday duty cannot be obtained as in past years, thus leaving a wider gap in the summer months.

(b) *Domestic*

Another serious drawback in maintaining sanatorium accommodation has been the deteriorating position in regard to domestic staff. On the 1st September, 1945, there was a deficiency of 14 per cent. in such staff at our sanatoria and hospitals, but the position was worse than the figure indicates because of the engagement of daily workers, who do not take evening or week-end duty, and the lower standard now prevailing among the recruits, there being no scope for selection.

COST OF THE TUBERCULOSIS SCHEME

The total estimated expenditure (including dispensaries, institutional accommodation, mass miniature radiography, maintenance allowances, Blackburn C.B. work, and administrative expenses) was £358,313.

The estimated income (including £19,000 from the Government funds for tuberculous ex-servicemen, £51,000 from the Government for maintenance allowances, and £8,500 from Blackburn C.B.) was £92,920.

The estimated net expenditure for 1945-46, therefore, is £265,393, equal to £144 per 1,000 of the population and an equivalent rate in the pound of 5.68d.

GENERAL SUPERVISION OF NURSES' HEALTH

The Ministry of Health and the Ministry of Labour and National Service (in Circular 33/44 dated 21st March, 1944) outline the special procedure to be followed for nurses and domestics taking up work in tuberculosis institutions. Candidates for such posts must have a full clinical examination including an X-ray photograph, with a Mantoux or other similar tuberculin test in order to exclude any girls whose state of health would expose them to special risk.

The Ministry of Health recommend that nurses, either shortly before or on entering a preliminary training school, should be medically examined, including X-ray examination of the chest and haemoglobin estimation, again at the end of six months, and afterwards annually, or more frequently if necessary, as a routine. Attention must be directed to diet, quarterly record of weight, adequacy of accommodation, hours of duty, recreation, age of entry, and care of sick nurses in order that a good standard of health may be maintained among the nursing staff. These measures are being carried out for the nursing and domestic staffs at the County sanatoria and hospitals so far as conditions allow.

CO-OPERATION WITH MEDICAL PRACTITIONERS

Co-operation with the medical practitioners and the medical officers and sanitary inspectors of County district councils continues most cordial and satisfactory. Of the "new" persons (excluding contacts) examined during 1944, 94 per cent. were referred by medical practitioners, etc., to the tuberculosis officers for an opinion as to diagnosis.

DR. G. FLETCHER

I am pleased to record that Dr. G. Fletcher, Consultant Tuberculosis Officer for Dispensary Area 3, and a member of the Medical Board set up under the Byssinosis (Workmen's Compensation) Scheme, 1941 (along with Professor Albert Ramsbottom and Professor Frank E. Tylecote), has been elected a Fellow of the Royal College of Physicians. Dr. Fletcher came on the County staff in 1914, and obtained his Membership of the Royal College in 1926. The County Tuberculosis Committee have congratulated him on his election to the Fellowship.

Return showing the WORK OF THE BLACKBURN DISPENSARY during the year 1944

DIAGNOSIS	PULMONARY				NON-PULMONARY				TOTAL				GRAND TOTAL
	Adults		Children		Adults		Children		Adults		Children		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
A.—(1) Number of definite cases of Tuberculosis on the Dispensary Register on 1st January, 1944	217	133	15	10	22	36	59	25	239	169	74	35	517
(2) Transfers from other Authorities during the year	6	—	—	—	—	1	1	—	6	1	1	—	8
(3) Lost sight of cases returned during the year	1	—	—	—	—	—	—	—	1	—	—	—	1
B.—Number of NEW CASES diagnosed as tuberculous during the year :—													
(1) Class T.B. minus	17	18	—	1	—	—	—	—	17	18	—	1	36
(2) Class T.B. plus	9	10	—	—	—	—	—	—	9	10	—	—	19
(3) Non-pulmonary	—	—	—	—	3	—	1	1	3	—	1	1	5
C.—Number of cases included in A and B written off the Dispensary Register during the year as :—													
(1) Recovered	6	6	1	1	2	3	14	9	8	9	15	10	42
(2) Dead (all causes)	16	9	1	1	1	—	—	—	17	9	1	1	28
(3) Removed to other Areas	6	3	—	—	1	1	—	—	7	4	—	—	11
(4) For other reasons	4	—	—	1	—	—	2	—	4	—	2	1	7
D.—Number of definite cases of Tuberculosis on the Dispensary Register on 31st December, 1944	218	143	13	8	21	33	45	17	239	176	58	25	498

Return showing the WORK OF THE COUNTY DISPENSARIES during the year 1944.

DIAGNOSIS	PULMONARY				NON-PULMONARY				TOTAL				GRAND TOTAL	
	Adults		Children		Adults		Children		Adults		Children			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
A.—NEW CASES examined during the year (excluding contacts) :—														
(a) Definitely tuberculous	602	450	19	20	98	149	138	114	700	599	157	134	1,590	
(b) Diagnosis not completed	—	—	—	—	—	—	—	—	35	27	10	11	83	
(c) Non-tuberculous	—	—	—	—	—	—	—	—	2,352	2,455	486	460	5,753	
B.—CONTACTS examined during the year :—														
(a) Definitely tuberculous	11	13	3	9	1	—	3	1	12	13	6	10	41	
(b) Diagnosis not completed	—	—	—	—	—	—	—	—	—	2	1	1	4	
(c) Non-tuberculous	—	—	—	—	—	—	—	—	246	610	349	329	1,534	
C.—CASES written off the dispensary registers as :—														
(a) Recovered	116	117	2	1	152	165	139	99	268	282	141	100	791	
(b) Non-tuberculous (including any such cases previously diagnosed and entered on the dispensary registers as tuberculous)	—	—	—	—	—	—	—	—	2,601	3,067	839	791	7,297	
D.—NUMBER OF CASES on dispensary registers on 31st December, 1944 :—														
(a) Definitely tuberculous	2,706	2,120	65	44	722	989	693	619	3,428	3,109	758	663	7,958	
(b) Diagnosis not completed	—	—	—	—	—	—	—	—	30	24	11	13	78	

1. Number of cases on dispensary registers on 1st January, 1944	7,919	8. Number of visits by tuberculosis officers to homes (including personal consultations)	3,082
2. Number of cases transferred from other areas and cases returned after discharge under Head 3 in previous years	292	9. Number of visits by nurses or health visitors to homes for dispensary purposes	36,929
3. Number of cases transferred to other areas, cases not desiring further assistance under the tuberculosis scheme, and cases "lost sight of"	303	10. Number of:— (a) Specimens of sputum, etc., examined (b) X-ray examinations made in connection with dispensary work	8,799 24,441
4. Cases written off during the year as dead (all causes)	789	11. Number of "recovered" cases restored to dispensary registers, and included in A (a) and A (b) above	59
5. Number of attendances at the dispensaries (including contacts)	37,544	12. Number of "T.B. plus" cases on dispensary registers on 31st December, 1944	3,318
6. Number of insured persons under domiciliary treatment on the 31st December, 1944	1,533		
7. Number of consultations with medical practitioners:— (a) Personal (b) Other	344 8,575		

Number of dispensaries for the treatment of tuberculosis (excluding centres used only for special forms of treatment).

Provided by the Council 24 | Provided by Voluntary Bodies Nil.

Number of examinations of persons referred by Civilian Medical Boards under the National Service (Armed Forces) Act, 1939	612
Number of examinations of entrants to industry under Sandstone (Silicosis) Scheme, 1929	2
Number of visits by tuberculosis officers to sanatoria, and pulmonary, special, and public assistance hospitals	336
Number of special visits by tuberculosis officers, i.e., interviews with medical officers of health, hospital officials	85

900.1/46.03854.18830.